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ABSTRACT

The Delaware Educational Assessment Program is described, and results of the spring 1984 implementation of the program are presented. The program involves: (1) statewide standardized testing for grades 1 through 8 and 11 in reading, English, and mathematics; (2) supplemental testing in science and social studies for 11th graders; (3) calculation of averages at the school, district, and state levels by grade and subject area; (4) analysis of test results by school district staff and the development of a plan to remedy weaknesses identified; and (5) reporting of individual achievement progress to parents. Prior to 1983, the program used the California Achievement Tests; thereafter, it adopted the Comprehensive Tests of Basic Skills. In addition, the program provides training in the use and interpretation of test data in curriculum and instructional improvement, supports a mini-grant program to encourage use of test results in instructional improvement, supports a computerized system for immediate access to and use of test data for program management and evaluation, and produces reports for classroom teachers to use in instructional diagnosis. Results from the spring 1984 program implementation are presented by content area, grade level, and school district, with various cross-tabulations. Sixteen data tables are provided. (TJH)

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Delaware Educational Assessment Program

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1984

Statewide Test Results

SUMMARY REPORT

Delaware State Department of Public Instruction

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STATE OF DELAWARE

DEPARTMENT OF PUBLIC INSTRUCTION

DOVER

I am pleased to present to you the summary results of the Spring 1984 Delaware Educational Assessment Program.

The Delaware State Board of Education is committed to providing a quality education for each student in Delaware's public school system. Central to this commitment is the need to assess and examine the performance of the public schools and their pupils as the basis for initiating constructive change in the educational system.

Through the assessment program, information is also provided to the schools about how well Delaware public school students perform important basic skills, and to parents about how well their children perform compared to other students in the nation, the state and in their local school district.

The staff members of the Planning, Research, and Evaluation Division provide not only an extensive array of reports on the results of the 1984 assessment but also assist educators and policy makers to understand test results fully in order that plans can be made and programs implemented to make further improvements in Delaware's public schools.

Identification of specific strengths and weaknesses in the basic skill areas allows Delawareans to build upon existing strengths and to focus resources on identified needs. In this way, the goal of providing a quality education for each student may be reached.

William B. Keene

William B. Keene
State Superintendent
Delaware Department of
Public Instruction

ACKNOWLEDGEMENTS

The success of the Delaware Educational Assessment Program is due to the cooperative efforts of many individuals. Department of Public Instruction staff in the Planning, Research, and Evaluation Division with responsibility for the testing program include Robert A. Bigelow, State Supervisor of Educational Assessment; Robin R. Taylor, State Specialist of Educational Assessment; Alice L. Valdes, State Supervisor of Educational Planning; and Diana M. Robertson, Secretary. This report was compiled through the combined efforts of the above listed staff members.

Recognition is extended to District Test Coordinators for time and energy devoted to implementing the Delaware Educational Assessment Program effectively and efficiently at the local level. Mention should also be made of those who so generously assisted in reviewing the test results so that their comments could become a part of this report. Their comments have been of great benefit to Department staff in interpreting the data. Those who served in these capacities during the 1983-84 administration of the program include:

District Test Coordinator

Howard Gaines, Appoquinimink
Joseph Price, Brandywine
George Brenner, Caesar Rodney
Edward Schaefer, Cape Henlopen
Joseph Crossen, Capital
Peter Idstein, Christina
Richard Bulls, Colonial
Margaret Clayton, Delmar
Charles Hudson, Indian River
Arthur Gilbert, Lake Forest
William Long, Laurel
Charles Moses, Milford
Edward Barnett, New Castle Vo-Tech
Gail Ames, Red Clay Consolidated
Stephen Schwartz, Seaford
Harriett Burris, Milford
Charles Davis, Woodbridge

Review Committee Members

Peter Idstein, Christina
Joseph FitzPatrick, Brandywine
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Joseph Crossen, Capital
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Jack Hallman, Indian River
Arthur Gilbert, Lake Forest
William Long, Laurel
Michael Woodall, Milford
Stephen Schwartz, Seaford
Charles Williams, Smyrna
Charles Davis, Woodbridge

William J. Geppert,
Department of Public Instruction
Gary L. Houpt,
Department of Public Instruction

Special recognition is extended to all school coordinators and teachers/examiners in each school within the State. Without their extensive involvement and dedication, the Delaware Educational Assessment Program could not be implemented successfully and reliably within our State's schools.

Wilmer E. Wise

Wilmer E. Wise, State Director
Planning, Research and
Evaluation Division

INTRODUCTION

Governor P. S. duPont signed into law HB 845 in 1978 which provided for the implementation of a statewide achievement testing program in Delaware. This legislation helped to shape the Delaware Educational Assessment Program. The provisions of HB 845, 129th General Assembly (14 Delaware Code §122(b) (17)) included:

- Statewide standardized testing in grades one through eight and eleven in the content areas of reading, English and mathematics;
- Calculation of averages at the school, district, and state levels by grade and subject area;
- Analysis of test results by school district staff and the development of a plan to remedy the weaknesses identified;
- Reporting of individual achievement progress to parents.

For the first five years of the program the test battery used was the *California Achievement Test*, normed in 1977. Comparisons made between Delaware and the nation during this period of time were based on the 1977 norms.

By 1983 it seemed likely that comparisons between current Delaware performance and six-year-old estimates of national performance might not accurately reflect current differences, particularly if improvement in basic skill performance at the national level was similar to that in Delaware.

In the interest of continuing to provide valid comparative information, a new test, the *Comprehensive Tests of Basic Skills*, was administered in the 1983-84 school year. Norms for this test were established in school year 1980-81.

This summary report includes a general description of the test and type of test score followed by state and district results. The complete Delaware Educational Assessment Program Report to the Legislature will be available in the Fall of 1984 from the Department of Public Instruction. This report will include individual school results, local district analyses of strengths and weaknesses and district plans to remedy identified areas of weaknesses.

DELAWARE EDUCATIONAL ASSESSMENT PROGRAM

The Delaware Educational Assessment Program (DEAP) provides for the annual test administration, scoring and reporting of the statewide test results. It is administered by the Planning, Research, and Evaluation Division of the Department of Public Instruction.

In addition, the assessment program undertakes activities to improve the usefulness of the data and their use in the schools. To this end, the program:

- provides training in the use and interpretation of test data in curriculum and instructional improvement;
- supports a mini-grant program to encourage use of test results in instructional improvement. In 1983-84 the emphasis was on training key district personnel in accessing district test data through existing computer resources;
- supports a computerized system for immediate access to and use of test data for program management and evaluation;
- produces reports for classroom teachers to use in instructional diagnosis by reorganizing student data to match class enrollments at the beginning of the school year.

WHAT REPORTS ARE PROVIDED?

This program provides many types of computer-generated reports of student test performances for parents, teachers, principals, and for district and state administrators. Reports to parents and teachers provide data for individual students while the remainder provide data for groups of students.

DESCRIPTION OF THE TEST AND TYPE OF SCORE REPORTED

WHAT KIND OF TEST WAS GIVEN?

During the week of March 20, 1984, approximately 60,000 Delaware public school students in grades one through eight and eleven were administered a battery of achievement tests as part of the state-funded DEAP. This year a new test was used, the nationally normed, standardized *Comprehensive Tests of Basic Skills* (CTBS), containing from 145 to 380 test items per grade in reading, language arts and mathematics. In addition, science and social studies were tested at grade eleven. The test battery was normed in the Fall of 1980 and Spring of 1981 on a representative national sample of over 250,000 students.

HOW WERE TESTS ADMINISTERED?

Delaware students in grades one through three received machine-scorable booklets while those in grades four through eight and eleven received test booklets with separate answer sheets. Student responses were machine scored and analyzed. Computer reports were then generated at the individual pupil, school, district and state level. These reports were returned to Delaware educators before the end of the school year and are available over the summer months for instructional planning.

WHAT STUDENTS ARE TESTED?

The statewide testing program includes all regular and special education students in grades one through eight and eleven with the exception of students in special schools or intensive learning centers. Students excepted are those with severe handicapping conditions such as autism, vision or hearing impairments. Results for this year's test included in this report are average scores for regular and special education students combined.

WHAT STUDENTS ARE INCLUDED IN THE STATE AND DISTRICT AVERAGES?

The averages for Total Reading, Total Language and Total Mathematics include only those students that took all subtests within that content area. For example, students who received a Total Mathematics score completed both the Mathematics Computation and the Mathematics Concepts and Applications subtests. Students completing only one of the subtests would not be counted in their grade averages. In addition, students

included in the Total Test Battery* average are those students who have completed every subtest in Reading, Language and Mathematics.

* *Since the first grade test does not produce a score for Total Language, there is no score for Total Battery at this grade level.*

WHAT CONTENT AREAS ARE TESTED?

The content areas included in the *Comprehensive Tests of Basic Skills* are presented in Table 1. The Reading section of the CTBS includes Word Attack for grades one through three only, Reading Vocabulary and Reading Comprehension for all grades. The Language section is composed of only Language Expression at grade one and Language Mechanics and Language Expression at all other grade levels. In this publication the Spelling subtest and the Reference Skills subtest are shown in the Language section. They **are not** included in the Total Language average score. Mathematics Computation and Mathematics Concepts and Applications comprise the Mathematics section of the Comprehensive Tests of Basic Skills. Science and Social Studies are included at the eleventh-grade level only.

TABLE 1
CONTENT AREAS TESTED BY THE
COMPREHENSIVE TESTS OF BASIC SKILLS
SPRING 1984
DELAWARE EDUCATIONAL ASSESSMENT PROGRAM

Content Area	Grades Tested
Reading	
Word Attack	1 - 3
Reading Vocabulary	1 - 8, 11
Reading Comprehension	1 - 8, 11
Language	
Language Expression	1 - 8, 11
Language Mechanics	2 - 8, 11
Spelling	2 - 8, 11
Reference Skills	4 - 8, 11
Mathematics	
Mathematics Computation	1 - 8, 11
Mathematics Concepts and Applications	1 - 8, 11
Science	11
Social Studies	11

WHAT TYPE OF TEST SCORE IS REPORTED?

The score used within this report is called the Normal Curve Equivalent (NCE). The NCE is a standard score scale with a national average of 50 and a range of scores from 1 to 99. This scale was selected because it enables comparisons to be made between different subtests and to the national average for all grades tested.

HOW CAN SCORES BE INTERPRETED?

When reading and interpreting district and state averages provided in this report, scores can be put in perspective by comparing the test score to the national average. Average scores higher than 50 are above the national norm.

WHY DO WE TEST?

Annual testing is conducted to provide student performance data useful for:

- identifying curricular and instructional weaknesses;
- placing students in instructional groups or programs;
- diagnosing individual pupil strengths and weaknesses;
- guidance and counseling;
- evaluating programs;
- instructional planning.

STATE RESULTS

HOW WELL DID WE DO IN CONTENT AREAS IN 1984?

The overall performance by Delaware students tested (regular and special education) was found to be above the national average in all content areas at all grade levels tested as shown in Table 2. In all grades, Total Mathematics scores were higher than Total Reading scores. In all grades for which Total Language scores were available, the Total Language scores were higher than Total Reading scores.

TABLE 2
AVERAGE SCORES FOR DELAWARE STUDENTS
SPRING 1984
DELAWARE EDUCATIONAL ASSESSMENT PROGRAM
(Regular and Special Education Combined)

Content Areas	Grades								
	1	2	3	4	5	6	7	8	11
Total Reading	54.4	59.5	53.2	57.2	53.1	53.9	52.6	53.5	52.2
Total Language	-	61.9	60.0	59.1	55.6	58.3	56.1	57.7	55.0
Total Mathematics	57.7	64.7	59.2	61.4	57.6	58.3	55.5	55.2	53.3
Total Battery	-	61.1	59.1	59.1	54.5	57.4	54.8	55.2	54.5
Science	-	-	-	-	-	-	-	-	52.5
Social Studies	-	-	-	-	-	-	-	-	57.4

NOTE: Score is the Normal Curve Equivalent which has a national average of 50.0.

Comparisons across grades. Students in the primary grades obtained higher scores overall than those in upper grades with scores generally decreasing across grades for all subtest areas. For elementary grades, Mathematics Computation scores were the highest subtest scores, with the exception of grades two and three.

Reading. Statewide averages in Reading were above the national average at all grades tested. Total Reading scores were lower than Total Language scores and Total Mathematics scores at all grade levels.

Language Arts. Statewide average Total Language scores of Delaware students were above the national average for all grades tested. Total Language scores were higher than Total Reading scores at all grade levels.

Mathematics. Statewide average Total Mathematics scores for Delaware students were above the national average for all grades tested. Total Mathematics scores were higher than Total Reading scores at all grade levels.

Summary. Average Delaware student performance was above the national average at all grade levels. Overall, performance was higher in Mathematics and Language than in Reading. Higher average scores were found in the primary grades. In general, these trends across grades and subtests are the same as those reported in the 1983 Statewide Test Results Report.

WHAT OPPORTUNITIES FOR CONTINUED IMPROVEMENT?

In the interest of continued improvement in student performance, a curriculum review committee was asked to analyze test, subtest and component objective data for each of the major content areas tested and to provide comments and observations suggested by the data.

The subtest data together with committee comments and observations are included in this section. Component objective data are shown in the Appendix by content area. In the Appendix, entries labeled **percent correct**, are averages of the percentage of students responding correctly to each of the items testing the category objective. These data are shown for regular Delaware students and for the national sample.

Reading. The Reading test consists of Word Attack, Reading Vocabulary, and Reading Comprehension subtests. Reading subtest scores are shown in Table 3.

TABLE 3
AVERAGE SCORES FOR DELAWARE STUDENTS
READING
SPRING 1984
DELAWARE EDUCATIONAL ASSESSMENT PROGRAM
(Regular and Special Education Students Combined)

Content Areas	Grades								
	1	2	3	4	5	6	7	8	11
Word Attack	53.8	57.7	56.7	-	-	-	-	-	-
Reading Vocabulary	55.0	59.0	53.3	55.9	52.7	52.5	51.1	52.6	49.6
Reading Compre.	53.3	58.2	51.9	56.7	53.9	54.8	53.4	53.3	52.7
Total Reading	54.4	59.5	53.2	57.2	53.1	53.9	52.6	53.5	52.2

NOTE: Score is the Normal Curve Equivalent which has a national average of 50.0.

The Curriculum Review Committee was pleased with the overall test performance of students in Reading, particularly at the primary and elementary grade levels. The committee observed that the high performance of primary students seems to reflect the instructional emphasis at that level. Noting the score decline over grades, the committee questioned the adequacy of reinforcement of reading skills at the secondary level.

Among the suggestions toward continued improvement offered by members of the committee were the following:

- Increase reading course requirements in the preparation of elementary teachers;
- Increase certification requirements for teachers of reading;
- Allocate increased time for inservice training in the teaching of reading;
- Increase training in the teaching of reading for subject area teachers at upper grade levels;
- Examine the instructional approaches and objectives being used at upper grade levels;
- Develop a K-12 vocabulary development program.

Language. The Language test consists of Language Mechanics and Language Expression subtests. Test data for Spelling and Reference Skills are also shown here because of their relationship in the instructional setting. Language subtest data are shown in Table 4.

TABLE 4
AVERAGE FOR DELAWARE STUDENTS
LANGUAGE
SPRING 1984
DELAWARE EDUCATIONAL ASSESSMENT PROGRAM
(Regular and Special Education Students Combined)

Content Areas	Grades								
	1	2	3	4	5	6	7	8	11
Language Mech.	-	65.0	60.7	59.7	57.1	58.4	55.7	57.3	53.8
Language Expre.	58.2	56.4	56.1	59.3	52.5	53.8	56.3	58.2	54.4
Total Language	-	61.9	60.0	59.1	55.6	58.3	56.1	57.7	55.0
Spelling	-	58.0	56.3	56.0	54.4	55.9	54.2	54.6	52.3
Reference Skills	-	-	-	58.6	53.8	56.3	53.6	54.3	52.2

NOTE: Score is the Normal Curve Equivalent which has a national average of 50.0.

The Curriculum Review Committee was pleased with the performance of students on the Language test. The committee noted that performance in Language Mechanics seems particularly strong at grades one through six. In comparison to Language Mechanics, Language Expression tends to be lower at the elementary level. The committee questioned whether this might be due to an over emphasis on minimum competency skills at the expense of thinking and application skills.

Committee suggestions for strengthening language skills centered around written expression. Among the suggestions of the committee were the following:

- A greater emphasis should be placed on writing techniques beginning at the fifth grade;
- The responsibility for teaching writing should be shared by all teachers;
- The quality of student composition should be emphasized by all teachers, e.g., clarity of thought, variety of expression, richness of vocabulary;
- Students at all grade levels should have more practice with composition in all subject areas;
- Instructional efforts in all curriculum areas should direct students to identify and correct misspelled words in written work.

Mathematics. The Mathematics test is comprised of two subtests, Mathematics Computation and Mathematics Concepts and Applications. Subtest data are shown in Table 5.

TABLE 5
AVERAGE SCORES FOR DELAWARE STUDENTS
MATHEMATICS
SPRING 1984
DELAWARE EDUCATIONAL ASSESSMENT PROGRAM
(Regular and Special Education Combined)

Content Areas	Grades								
	1	2	3	4	5	6	7	8	11
Mathematics Comp.	52.8	63.8	59.7	62.5	59.5	59.5	56.4	55.5	54.0
Mathematics Conc. and Application	61.9	58.9	56.4	60.9	54.1	53.7	55.1	54.4	51.4
Total Mathematics	57.7	64.7	59.2	61.4	57.6	58.3	55.5	55.2	53.3

NOTE: Score is the Normal Curve Equivalent which has a national average of 50.0

The Curriculum Review Committee identified overall Mathematics performance as an area of particular strength. The committee noted, however, that performance in Mathematics Concepts and Applications tended to be lower than that in Computation. It was observed that, in general, the instructional emphasis tends to be on drill and practice at the expense of concept development. Some committee members expressed the opinion that the increased mathematics requirement at the secondary level should help to improve performance at that level.

Among the suggestions offered toward continued improvement in mathematics were the following:

- Conduct an examination of techniques used in teaching multiplication and division of decimals and fractions;
- Bring about better balance between time allocated for instruction in problem-solving and computation.

Science. The Science test was administered in grade eleven only. No subtest scores are available. The average NCE score for Delaware students was 52.5. The national average is 50.0.

The Curriculum Review Committee was pleased with the test performance of students in science. The committee noted that the average score for Grade 11 was above the national average despite the fact that relatively few students elect to take courses in the areas tested; i.e., botany, zoology, ecology, physics, chemistry, and land, sea or space. Several members of the committee expressed the opinion that the additional course requirement at the secondary level should result in improved performance at that level.

Many of the suggestions offered by the committee indicated a desire for additional performance data. Among the suggestions offered by the committee were the following:

- There is a need to emphasize process skills in teaching science;
- Thinking skills, such as drawing inferences, must be carefully taught;
- There should be additional testing at grades 5 or 6 to assist in the identification of prerequisite skills.

Social Studies. The Social Studies subtest was administered in grade eleven only. No subtest scores are available. The average NCE score for Delaware students was 57.4. The national average is 50.0.

The Curriculum Review Committee was especially pleased with the test performance of students in the area of social studies. However, the committee noted that, in relation to other topics, geography skill performance was low. Several members of the committee indicated a desire for additional performance data.

Among the suggestions offered by the committee were the following:

- Testing of social studies should begin at grades 5 or 6;
- Future reviews of the social studies curriculum should again consider the place of geography in the overall social studies curriculum and the relatively light coverage currently given this topic.

DISTRICT RESULTS

HOW WELL DID INDIVIDUAL DISTRICTS DO ON THE TESTS?

School district average scores for each of the basic skill areas are presented by grade level in Tables 6 through 10. Analysis of standardized test results, such as comparing average performance to national norms and identifying trends in previous performance helps local school officials detect strengths and weaknesses in district educational programs.

Judgments as to whether differences between district test averages and the nation are satisfactory or unsatisfactory should be made in light of important factors unique to each school district. Factors to be considered in this judgment may include background characteristics of the students within the school, the match between curriculum objectives and the objectives assessed by the test, student mobility, dropout rate, student ability, local curriculum priorities and available financial resources.

TABLE 6
READING
AVERAGE NCE SCORES FOR
DELAWARE SCHOOL DISTRICTS*
(Regular and Special Education Combined)

	Grades								
District	1	2	3	4	5	6	7	8	11
Appoquinimink	52.9	62.6	54.1	61.0	54.6	55.1	52.5	51.0	51.5
Brandywine	57.9	62.4	54.4	59.3	54.0	56.7	54.6	55.9	59.9
Caesar Rodney	52.7	58.4	53.7	58.0	54.9	56.6	54.6	56.9	56.0
Cape Henlopen	59.0	65.9	55.2	61.4	55.4	57.0	54.7	57.1	47.0
Capital	53.3	56.0	51.3	57.2	51.5	53.4	53.1	51.7	55.9
Christina	52.6	59.7	54.2	56.9	54.6	54.4	52.7	53.4	54.4
Colonial	51.1	58.5	51.2	53.0	49.2	51.1	50.1	50.6	47.6
Delmar	-	-	-	-	-	-	55.6	55.0	49.9
Indian River	59.2	60.4	55.6	57.2	53.9	54.2	52.4	52.4	45.5
Lake Forest	57.2	60.7	53.1	57.3	56.4	51.6	53.8	54.3	51.7
Laurel	53.9	60.1	46.8	50.9	51.7	49.0	50.7	49.9	46.1
Milford	54.3	59.7	55.8	60.0	54.3	54.4	49.5	57.9	52.1
NCC Voc-Tech.	-	-	-	-	-	-	-	-	46.8
Red Clay Cons.	54.8	57.2	52.2	57.9	52.6	53.9	52.3	52.9	52.9
Seaford	53.7	55.8	51.9	55.6	51.3	52.0	51.3	51.2	49.1
Smyrna	56.9	60.3	54.3	58.0	52.7	51.4	53.6	54.7	53.6
Woodbridge	47.1	58.3	49.6	53.9	47.3	49.6	47.6	49.3	51.5

* The national average Normal Curve Equivalent score is 50.0.

TABLE 7
LANGUAGE
AVERAGE NCE SCORES FOR DELAWARE SCHOOL DISTRICTS*
(Regular and Special Education Combined)

District	Grades								
	1	2	3	4	5	6	7	8	11
Appoquinimink	-	64.2	59.1	63.5	58.4	55.4	52.6	52.3	56.3
Brandywine	-	63.9	59.0	59.9	56.2	60.3	55.9	57.5	61.9
Caesar Rodney	-	61.6	58.3	60.2	57.7	61.5	56.4	59.6	55.9
Cape Henlopen	-	67.4	59.4	64.7	57.7	60.1	57.9	63.2	50.1
Capital	-	58.5	56.3	58.4	56.3	57.8	56.5	55.2	57.5
Christina	-	61.6	60.7	58.0	56.5	59.0	56.2	57.5	54.0
Colonial	-	62.2	60.6	54.8	52.6	53.7	52.9	53.9	52.1
Delmar	-	-	-	-	-	-	54.5	55.4	54.3
Indian River	-	65.7	66.8	64.0	57.7	59.6	60.2	62.1	54.3
Lake Forest	-	61.7	62.1	61.5	59.9	58.7	59.0	57.6	57.1
Laurel	-	65.3	55.0	54.1	55.5	57.1	57.0	58.3	48.0
Milford	-	61.5	61.2	60.2	55.4	59.4	56.3	62.8	58.3
NCC Vo-Tech.	-	-	-	-	-	-	-	-	47.5
Red Clay Cons.	-	59.4	59.8	59.8	54.0	59.2	56.2	57.7	58.0
Seaford	-	56.7	58.5	54.2	51.0	54.4	57.6	58.3	49.8
Smyrna	-	60.3	59.3	59.9	54.4	57.4	56.3	58.8	58.0
Woodbridge	-	62.9	55.2	56.2	50.6	55.7	50.8	53.6	54.3

TABLE 8
MATHEMATICS
AVERAGE NCE SCORES FOR DELAWARE SCHOOL DISTRICTS*
(Regular and Special Education Combined)

District	Grades								
	1	2	3	4	5	6	7	8	11
Appoquinimink	50.5	68.3	58.2	58.4	64.0	57.1	56.7	53.7	51.7
Brandywine	61.7	67.1	58.7	62.0	57.9	60.0	56.9	54.7	61.8
Caesar Rodney	54.3	61.8	60.9	64.6	61.4	63.8	58.1	59.4	54.6
Cape Henlopen	64.4	72.8	62.3	68.7	62.0	61.4	57.8	59.6	49.6
Capital	54.5	62.0	59.5	60.0	55.7	56.7	54.4	51.9	58.8
Christina	56.1	63.1	59.4	59.5	57.9	59.2	54.8	55.4	55.1
Colonial	56.0	64.7	56.0	56.8	52.5	53.7	53.0	51.9	47.2
Delmar	-	-	-	-	-	-	54.1	54.6	52.1
Indian River	59.8	66.8	62.0	64.7	60.7	63.3	60.0	56.6	45.6
Lake Forest	60.0	68.5	58.5	64.4	63.2	55.8	53.9	53.6	53.3
Laurel	53.9	64.2	54.5	55.2	52.7	51.8	54.0	55.3	48.0
Milford	59.0	68.4	62.9	66.4	58.0	57.1	51.6	58.5	57.3
NCC Voc-Tech.	-	-	-	-	-	-	-	-	48.7
Red Clay Cons.	58.7	61.4	59.0	63.0	56.6	59.4	55.3	56.0	53.0
Seaford	57.1	66.2	57.8	55.6	57.4	53.0	54.5	53.9	51.4
Smyrna	65.7	63.7	60.8	64.6	55.3	54.6	58.6	56.3	51.8
Woodbridge	53.8	63.0	59.9	57.7	56.6	52.8	49.8	50.3	50.2

* The national average Normal Curve Equivalent score is 50.0

TABLE 9
TOTAL BATTERY
AVERAGE NCE SCORES FOR
DELAWARE SCHOOL DISTRICTS*
(Regular and Special Education Combined)

District	Grades								
	1	2	3	4	5	6	7	8	11
Appoquinimink	-	64.1	58.9	61.9	57.4	56.5	53.2	51.5	54.7
Brandywine	-	63.7	59.3	60.5	55.3	59.9	56.1	56.0	62.6
Caesar Rodney	-	59.2	59.0	60.5	56.8	60.9	56.1	57.9	56.5
Cape Henlopen	-	69.0	60.6	64.6	57.0	60.0	56.8	59.5	49.1
Capital	-	57.5	56.8	58.6	53.5	56.5	55.0	52.4	58.3
Christina	-	60.5	59.9	58.1	55.7	58.1	55.0	55.3	55.7
Colonial	-	60.5	57.4	54.4	50.7	53.3	51.8	51.6	50.1
Delmar	-	-	-	-	-	-	54.8	54.6	52.6
Indian River	-	63.6	64.1	61.7	56.4	58.9	57.1	56.7	50.0
Lake Forest	-	62.9	59.6	60.9	58.6	55.6	56.3	55.9	54.3
Laurel	-	62.1	52.7	53.1	52.6	52.9	53.6	53.5	47.4
Milford	-	62.3	61.9	62.0	55.3	58.0	52.6	60.0	56.4
NCC Vo-Tech.	-	-	-	-	-	-	-	-	47.3
Red Clay Cons.	-	58.4	58.8	60.1	53.5	58.1	54.9	55.5	55.9
Seaford	-	58.7	57.6	55.1	52.0	53.7	54.9	53.9	50.1
Smyrna	-	60.3	59.6	60.6	53.3	55.1	56.1	56.5	55.7
Woodbridge	-	60.3	55.5	55.6	49.5	52.9	48.8	50.3	54.1

TABLE 10
SCIENCE AND SOCIAL STUDIES
AVERAGE NCE SCORES FOR
DELAWARE SCHOOL DISTRICTS*
(Regular and Special Education Combined)

District	Science	Social Studies
	11	11
Appoquinimink	49.6	54.5
Brandywine	59.1	65.6
Caesar Rodney	55.6	58.4
Cape Henlopen	48.7	55.1
Capital	57.6	61.8
Christina	54.6	60.9
Colonial	47.4	52.6
Delmar	50.9	52.6
Indian River	45.9	51.3
Lake Forest	55.4	55.3
Laurel	48.9	54.5
Milford	52.3	55.7
NCC Vo-Tech.	46.8	51.3
Red Clay Cons.	52.7	57.2
Seaford	50.6	56.5
Smyrna	55.7	58.8
Woodbridge	53.1	55.0

* The national average Normal Curve Equivalent score is 50.0.

1984
ESTIMATES OF PERFORMANCE
on the
CALIFORNIA ACHIEVEMENT TEST

With the change from the *California Achievement Test* (CAT) to a more recently normed, standardized achievement test, it was anticipated that any change in test performance would raise questions about whether the change was due to the change in tests or to change in actual attainments of Delaware students.

In order to be able to address anticipated questions as directly as possible, the Department of Public Instruction required that the publisher of the *Comprehensive Tests of Basic Skills*, CTB/McGraw-Hill, conduct an equating study between the *California Achievement Test* and the *Comprehensive Tests of Basic Skills*. This study makes it possible to estimate the scores that would have been obtained by Delaware students had the CAT been administered for an additional year. Contractual arrangements were made with the publisher to produce CAT performance estimates for 1984, the year in which the transition from the CAT to the CTBS was made.

Equated scores are not available for all subtests or for the Total Battery at grades one through three. Therefore, estimates of performance on the *California Achievement Test* are shown only for grades four through eight and eleven in Table 11.

NOTE: Scores shown on the following page for 1984 are **not** the same as CTBS scores shown in previous sections of this report.

TABLE 11
CALIFORNIA ACHIEVEMENT TEST
AVERAGE NCE SCORES FOR 1982 AND 1983
ESTIMATED NCE SCORES FOR 1984
(Regular and Special Education Combined)

Grades	Content Area			
	Reading	Language	Mathematics	Total Battery
Grade 4				
1982	54	58	57	56
1983	55	60	58	58
*1984**	*59*	*63*	*62*	*62*
Grade 5				
1982	56	59	58	59
1983	56	60	59	59
*1984**	*58*	*62*	*59*	*60*
Grade 6				
1982	56	59	57	58
1983	57	61	59	60
*1984**	*58*	*63*	*62*	*61*
Grade 7				
1982	56	56	58	57
1983	57	57	58	58
*1984**	*57*	*59*	*60*	*59*
Grade 8				
1982	55	57	57	56
1983	56	58	57	58
*1984**	*57*	*60*	*58*	*59*
Grade 11				
1982	53	54	54	54
1983	54	55	54	55
*1984**	*54*	*56*	*54*	*54*

* 1984 scores are estimates based on the CTB/McGraw-Hill Equating Study.

APPENDIX

TABLE 12
PERCENT CORRECT*
READING
SPRING 1984
(Regular Students Only)

Category Objective	Grades 1 DE/NAT	2 DE/NAT	3 DE/NAT	4 DE/NAT	5 DE/NAT	6 DE/NAT	7 DE/NAT	8 DE/NAT	11 DE/NAT
WORD ATTACK									
Initial Consonant	91/82								
Final Consonant	83/69								
Cluster/Digraph Words	87/75	93/87							
Sight Words	86/77	96/88							
Median Vowels	70/58	87/74	84/68						
Diphthongs/Variant Vowels		78/61	69/56						
Syllables/Roots/Affixes		90/79	91/73						
Compounds/Components		94/82	91/81						
Contractions			97/85						
READING VOCABULARY									
Oral Categories/Words	68/55								
Oral Definitions/Words	81/69								
Same Meaning	69/57	88/74	86/76	80/69	74/65	82/74	67/62	74/68	70/69
Unfamiliar Words in Context	77/64	82/69	87/77	76/65	68/59	78/69	76/69	81/74	73/70
Multimeaning Words			83/71	72/62	63/55	72/65	68/64	74/70	69/68
Missing Words in Context				69/61	70/65	80/74	75/68	82/74	69/68
Meaning of Affixes				81/67	85/74	88/81	75/67	79/73	73/72
READING COMPREHENSION									
Sentence Meaning	84/73								
Passage Details	51/46	83/68	81/72	74/63	77/66	82/73	73/67	78/74	84/80
Character Analysis	61/54	82/65	87/79	77/68	71/63	78/70	76/67	82/74	71/65
Main Idea		71/58	78/70	78/63	73/64	80/70	76/69	80/75	78/73
Generalization		80/65	81/73	74/61	74/65	80/72	76/69	80/75	75/70
Written Forms			89/79	76/60	75/67	82/74	64/55	72/62	73/68
Writing Techniques				78/66	61/53	70/61	66/59	73/66	69/66

* This table shows the percent correct for students in Delaware (DE) compared to the percent correct for the students in the national sample (NAT).

TABLE 13
PERCENT CORRECT*
LANGUAGE
SPRING 1984
(Regular Students Only)

Category Objective	Grades 1 DE/NAT	2 DE/NAT	3 DE/NAT	4 DE/NAT	5 DE/NAT	6 DE/NAT	7 DE/NAT	8 DE/NAT	11 DE/NAT
LANGUAGE MACHANICS									
CAPITALIZATION									
Pronoun I/Nouns/Adjectives		85/66	89/76	85/73	82/70	87/74	79/70	82/73	62/58
Beginning Words/Titles		86/66	92/81	91/78	59/47	68/53	62/51	67/57	69/63
PUNCTUATION									
Period/Question Mark/ Exclamation Point/Comma		80/62	82/67	81/66	74/61	80/66	67/60	73/63	77/72
Quotation Marks				69/48	82/68	88/74	82/68	87/72	
Colon/Semicolon									53/44
PUNCTUATION AND CAPITALIZATION									
Editing Skills				70/58	71/61	78/66	72/63	78/67	60/55
LANGUAGE EXPRESSION									
USAGE									
Nouns	87/77	90/80	71/63	65/54					
Pronouns		92/80	96/88	87/76	84/78	87/82	66/62	70/65	57/54
Verbs	68/56	86/73	88/81	82/72	82/75	84/79	78/72	80/75	63/58
Adjectives/Adverbs	78/66	88/77	87/77	91/81	73/67	81/73	78/68	83/72	91/88
SENTENCE STRUCTURE									
Sentence Patterns	85/72	95/89							
Sentence Formation	67/55	90/77	79/67	64/49					
Sentence Recognition				83/67	77/68	82/72	71/59	77/63	75/70
PARAGRAPH ORGANIZATION									
Sentence Combining				80/68	79/72	85/77	73/65	79/69	72/65
Topic Sentence				66/51	58/51	65/58	64/51	72/56	69/58
Sequence				83/67	72/63	80/71	67/56	73/61	75/69
Clarity					65/59	72/65	71/62	76/66	66/60
Types of Writing Style							74/60	81/66	86/76

* This table shows the percent correct for students in Delaware (DE) compared to the percent correct for the students in the national sample (NAT).

TABLE 14
PERCENT CORRECT*
MATHEMATICS
SPRING 1984
(Regular Students Only)

Category Objective	Grades 1 DE/NAT	2 DE/NAT	3 DE/NAT	4 DE/NAT	5 DE/NAT	6 DE/NAT	7 DE/NAT	8 DE/NAT	11 DE/NAT
MATHEMATICS COMPUTATION									
Add Whole Numbers	77/69	92/80	85/76	84/73					
Add Decimals/Fractions				85/73	65/45	78/60	68/52	79/67	77/73
Subtract Whole Numbers	83/77	88/75	85/75	79/63					
Subtract Decimals/Fractions				75/56	72/57	83/72	71/54	81/69	77/72
Multiply Whole Numbers			94/82	89/72	80/67	89/81			
Multiply Decimals/Fractions					67/60	79/71	64/51	75/62	78/74
Divide Whole Numbers			87/64	82/65	71/56	84/73			
Divide Decimals/Franctions							55/45	67/56	66/61
Integers							46/44	58/50	68/62
Algebraic Expressions									65/55
Exponents or Percents									62/56
MATHEMATICS CONCEPTS AND APPLICATIONS									
Numeration	83/70	86/77	82/70	73/58	69/59	77/69	61/51	71/60	68/67
Number Sentences			87/78	74/61	66/58	75/69	62/55	74/64	70/67
Number Theory			75/64	79/65	70/60	81/70	68/56	75/66	70/66
Problem Solving	73/58	91/83	81/75	73/57	74/66	81/77	67/58	74/68	70/66
Measurement		78/64	83/72	81/67	60/55	70/65	61/54	69/63	59/54
Geometry		84/75	86/77	68/51	73/62	80/71	83/70	88/78	76/71
Measurement/Geometry	79/66								

* This table shows the percent correct for students in Delaware (DE) compared to the percent correct for the students in the national sample (NAT).

TABLE 15
PERCENT CORRECT*
SCIENCE
SPRING 1984
(Regular Students Only)

Category Objective	Grade 11 DE/NAT
Botany	73/69
Zoology	67/65
Ecology	64/61
Physics	58/54
Chemistry	73/69
Land/Sea/Space	62/55

TABLE 16
PERCENT CORRECT*
SOCIAL STUDIES
SPRING 1984
(Regular Students Only)

Category Objective	Grade 11 DE/NAT
Geography	52/44
Economics	78/67
History	71/62
Political Science	58/51
Sociology	69/60
Interdisciplinary	74/66

* This table shows the percent correct for students in Delaware (DE) compared to the percent correct for the students in the national sample (NAT).

The complete report of the statewide testing program titled DELAWARE EDUCATIONAL ASSESSMENT PROGRAM 1984 REPORT TO THE LEGISLATURE will be available in November, 1984. It contains school, district and state results as well as analysis of strengths and weaknesses for each Delaware school district. To obtain a copy, contact the Planning, Research, and Evaluation Division of the Delaware State Department of Public Instruction, Townsend Building, Dover, DE 19901.